

ANNEX J: RADIOLOGICAL RESPONSE PROCEDURES

1. General: The potential for a significant nuclear-related accident in the State of Alaska is remote. There are no active nuclear reactors in the State of Alaska and the quantities of nuclear materials transported within the State are insignificant in comparison to nuclear waste/cargo shipments in the Lower 48 States. However, Alaska's proximity to nuclear facilities (e.g., power plants, waste storage sites, and processing plants) in Eastern Russia and seasonal weather patterns warrant concern. Most of these facilities are substandard in construction and have had a history of reported and unreported releases.

There are two basic situations which may occur following a radiological accident. In the case of a major catastrophic event with serious impact to the State of Alaska, the Governor may declare a disaster emergency, the State Emergency Operations Plan (EOP) would be activated, and the Department of Military and Veterans Affairs would be the lead agency. For non-declared emergencies, the Department of Environmental Conservation would more than likely serve as the lead agency under their hazardous materials response charter.

For international trans-border releases which could impact the State, the lead Federal agency would be the Environmental Protection Agency (per the guidance contained in the Federal Radiological Emergency Response Plan (FRERP, May 1, 1996).

The following procedures address actions to be taken in the event of a radiological emergency.

2. Notification Procedures (see Appendix I):

3. Basic Responsibilities of State and Federal Agencies:

- a. Federal agency tasking is contained in the Federal Radiological Emergency Response Plan (FRERP).**
- b. The Alaska Department of Military and Veterans Affairs (through the Division of Emergency Services) will:**
 - *Provide the designated State Coordinating Officer (SCO).
 - Receive communications from Federal, State and Local agencies.
 - *Provide updates to the Governor and Federal, State and Local agencies through Situation Reports (SITREPs).
 - *Provide a State Area Commander and lead staff for the State Emergency Coordination Center.

- Facilitate release of health advisory information and recommended population protection measures.
- *Coordinate area evacuation if the situation warrants.

***Basic tasks under a declared disaster situation.**

c. The Alaska Department of Environmental Conservation will:

- Set up/participate in the Unified Command (non-disasters) and provide the State On-Scene Coordinator (SOSC).
- Coordinate health advisories with ADHSS.
- Coordinate and verify accuracy of actual and forecasted radiological contamination plume locations thru NOAA (National Weather Service) satellite imagery and the University of Alaska's Geophysical Institute at Fairbanks.
- Provide Air Quality staff and response team assistance as requested by the State Coordinating Officer (SCO) or the DEC State On-Scene Coordinator (SOSC).
- Alert the EPA Alaska Operations Office (if not previously alerted) and local communities which may be at risk. Coordinate response actions.
- Determine areas within the State which are likely to receive airborne radiological contamination and establish a radiation monitoring network. (See Appendix II for further details). As a minimum:
 - Establish remote sensing air monitoring procedures through the use of available Pressurized Ion Chamber (PIC) detection instruments.
 - Activate the three radiation monitoring network sites (in Anchorage, Fairbanks, and Juneau) and ensure the units are operational. These three sites are part of the EPA-funded Environmental Radiation Ambient Monitoring System (ERAMS) which are designed to collect airborne particulate and rain

water samples in the major population centers.

- If sites are not fully functional, direct emergency maintenance and repair to bring the systems up to full operational capability.
- Coordinate with EPA and determine local sample screening and analysis capability to expedite turnaround of sampling results.
- Coordinate with Federal agencies (Department of Defense (US Air Force, US Army, US Navy resources in Alaska), US Coast Guard, etc.) for establishing monitoring network and data exchange.

c. The Alaska Department of Health and Social Services will:

- Develop appropriate protective action guidelines (PAGs) for response to radiological releases. EPA-developed Federal protective action guidelines may be used if deemed appropriate for the State of Alaska.
- Coordinate health advisories with ADEC prior to release over Statewide media networks.
- Alert the US Food and Drug Administration (US FDA) and the US Nuclear Regulatory Commission (NRC) of the potential for radiological contamination impacting the State of Alaska.
- Advise the Unified Command on the potential health hazards resulting from the deposition of radiological contamination.
- Maintain contact with rural health facilities and provide them with updated status reports.
- Provide a representative to the Unified Command structure.

d. The Alaska Department of Labor will:

- Alert Federal Occupational Safety and Health Administration officials.
- Coordinate with ADHSS in determining OSHA standards for radiation exposure to emergency response personnel.

e. The Alaska Department of Fish and Game will:

- In conjunction with the U.S. Department of Agriculture and other Federal agencies, determine the impact of radiological hazards on fish and wildlife in the affected area.
- Advise the general public on any restrictions to commercial, sport, or subsistence fishing and hunting as a result of potential health hazards (from consumption of contaminated fish and wildlife).

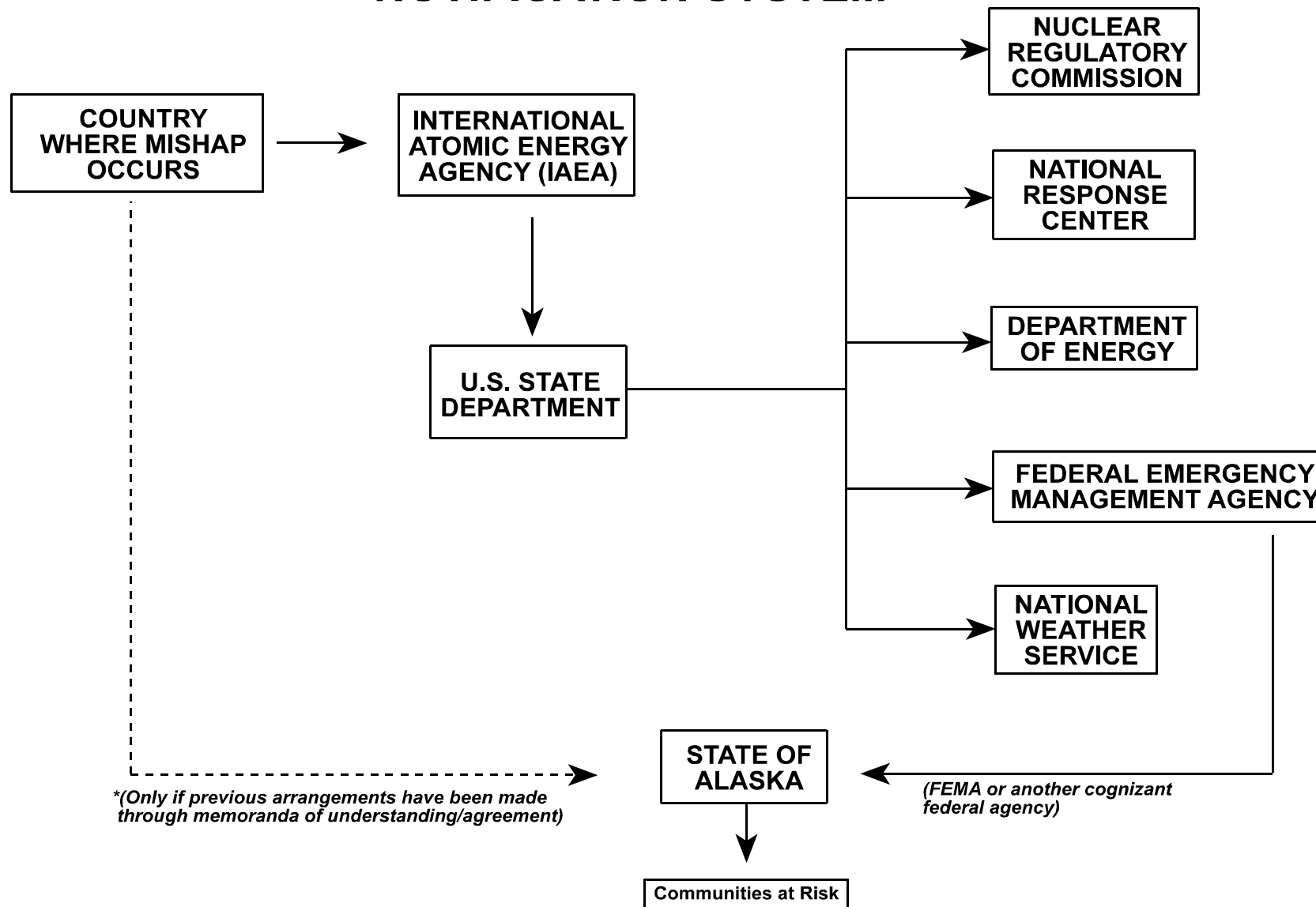
APPENDIX I - NOTIFICATION PROCEDURES

General: Immediate notification of a radiological incident is critical to develop and implement the proper response strategy to protect the general populace. While existing international protocols outline a formal notification system through the International Atomic Energy Agency (IAEA), direct communication with the affected country will provide immediate information on the release. The existing lines of communication are described below. Additionally, Figure 1 provides a schematic flow diagram for notification.

- a. **International Notification:** Currently, in the event of nuclear releases which may threaten the United States, the U.S. State Department could be notified by the International Atomic Energy Agency (IAEA) **and/or** the country where the release has occurred.
- b. **Federal Notification:** The State Department notifies the Nuclear Regulatory Commission (NRC) which, in turn, notifies its regional offices, the National Response Center, the Department of Energy, Federal Emergency Management Agency, National Weather Service, and the State of Alaska.
- c. **State Notification:** Within the State of Alaska, the Division of Emergency Services (DES) would receive the initial call from Federal agencies. Upon receiving notification, DES will notify the Governor and the Alaska Departments of Environmental Conservation (ADEC) and Health and Social Services (ADHSS). Additional notification responsibilities are also indicated under basic tasks for each State agency.
- d. **Local Notification:** The State agency in charge of the radiological response will provide immediate notification to local elected officials for those communities which may be at risk from the radiological hazard. Also see additional notification responsibilities indicated under basic tasks for each State agency.

Figure 1 - Radiological Release Notification

NOTIFICATION SYSTEM



(Change 1, May 1996)

APPENDIX II - RADIATION MONITORING SYSTEM/NETWORK

General: Within the State of Alaska, basic radiation monitoring capabilities are described below. Additionally, Figure 2 indicates the preferred locations for deploying assets (if available and operational). In the event of a radiological incident threatening the State of Alaska, other resources in the lower 48 could be deployed to enhance the area and point detection capabilities.

- **Environmental Radiation Ambient Monitoring System (ERAMS) (maintained jointly by ADEC and EPA)**

There are a total of three ERAMS units located in Fairbanks, Anchorage and Juneau. These units are equipped with air monitoring filter media which require removal for subsequent laboratory analysis. The system does not provide an immediate, direct measurement capability. The ERAMS unit in Fairbanks is currently the only system operated on a daily basis.

- **Pressurized Ion Chamber (PIC) instruments (maintained by ADEC).**

A total of four PIC instruments are available in the State of Alaska. One instrument is at Pt Hope, while another instrument is maintained at the DEC Office in Fairbanks. This instrument can be deployed immediately to Nome in the event of a threatening radiological incident. The other two PIC instruments are maintained at the Juneau Lab and could be deployed to forward locations in Bethel and Dutch Harbor when necessary. All of these instruments will be equipped to provide remote sensing and satellite downlink of information for immediate warning of increased radiation levels.

- **Victoreen Thyac V Survey Meters (maintained by ADEC)**

These handheld survey meters are maintained by ADEC offices statewide and provide point detection of radiation hazards.

- **Department of Defense**

The Department of Defense also maintains a variety of radiation detection equipment at four primary locations in the state: Elmendorf AFB and Ft Richardson in Anchorage, and Eielson AFB and Ft Wainwright in

Fairbanks. These instruments are primarily handheld point detectors for high and low range radiation intensities. Personal dosimeters and film badges are also available in limited quantities. DoD does not maintain airborne monitoring capabilities in Alaska. For a listing of current DoD radiological equipment assets located within Alaska, see Figure 3.

- **United States Coast Guard**
- **Other Federal Agency Assets (EPA, FEMA, DOE, NRC)**

Department of Energy - The Department of Energy maintains national and regional coordination offices as points of access to Federal radiological emergency assistance. The Regional Coordination Office for DOE Region 8 is the Richland Operations Office.

RADIOLOGICAL ASSISTANCE PROGRAM (RAP), REGION 8, RICHLAND OPERATIONS OFFICE, RICHLAND, WASHINGTON

The Region 8 Radiological Assistance Program (RAP) is responsible for providing assistance in monitoring and assessment activities associated with radiological incidents or emergencies and coordinating U.S. Department of Energy (DOE) resources as needed in the States of Washington, Oregon and Alaska. The RAP team is made up of teams composed of qualified DOE, Richland Operations Office (RL) and RL contractor personnel who are experts in monitoring radioactive materials involved in the incident. The Radiological Assistance Program (RAP) Team Leader (an RL official or designee) is responsible and has the authority to activate the resources and support necessary when assistance is requested. The radiological assistance teams are deployed in support of the State authorities and/or lead Federal agency and are not intended, except when DOE is the lead Federal agency, to direct actions at the scene or assume command and control.

The RL can request the assistance of the other emergency response assets should the existing capabilities of the RAP team be inadequate to accomplish the task. Requests can be made through the Region 8 RAP or through DOE-Headquarters Emergency Operations Center (HQ-EOC) through a 24-hour telephone number. Determination to activate or deploy the emergency response assets will be made by the Program Office, Deputy Assistant Secretary for Military Application and Stockpile Management (DASMASM) located in Washington, D.C.

Specialized expertise and equipment capabilities are located throughout the DOE and DOE contractor system. The DOE radiological assistance

teams are knowledgeable of the DOE resources and may request their use. Other Federal assets are listed below:

- **FEDERAL RADIOLOGICAL MONITORING AND ASSESSMENT CENTER (FRMAC), DOE, NEVADA OPERATIONS OFFICE**

The Federal Radiological Monitoring and Assessment Center (FRMAC) is an operational center located at or near the scene of a radiological incident and provides a focal point to compile and coordinate all off-site Federal radiological monitoring and assessment activities. The FRMAC is established when a major radiological emergency exists. A major radiological emergency is determined when a request for assistance requires capabilities exceeding those of the DOE regional RAP team. A request for additional assistance is recommended to the senior official or lead Federal agency official.

The FRMAC is self-supporting, including specialized resources in radiation protection, legal and medical support, communications, logistics, videos, and administration. A FRMAC could be deployed as a unit or as conditions dictate. Specific capabilities could be requested, e.g., Aerial Measuring System (AMS) and Atmospheric Release Advisory Capability (ARAC).

- **AERIAL MEASURING SYSTEM (AMS) (DOE, NEVADA OPERATIONS OFFICE)**

The Nevada Operations Office contractor, Bechtel Nevada, can provide aerial measurements of ground surfaces through gamma spectroscopy. They also have a capability to make in-plume air concentration measurements in the event of a reactor accident release, large area continuous release, or contamination incident. Aerial photography can be performed simultaneously with isodose and isoconcentration curves. The aerial measurement survey is primarily used for making rapid radiological assessment of substantial land areas and the analysis and identification of the radioactive emissions from a source.

- **ATMOSPHERIC RELEASE ADVISORY CAPABILITY (ARAC), (DOE OAKLAND OPERATIONS OFFICE)**

Another major DOE resource maintained at Lawrence Livermore National Laboratory is the Atmospheric Release Advisory

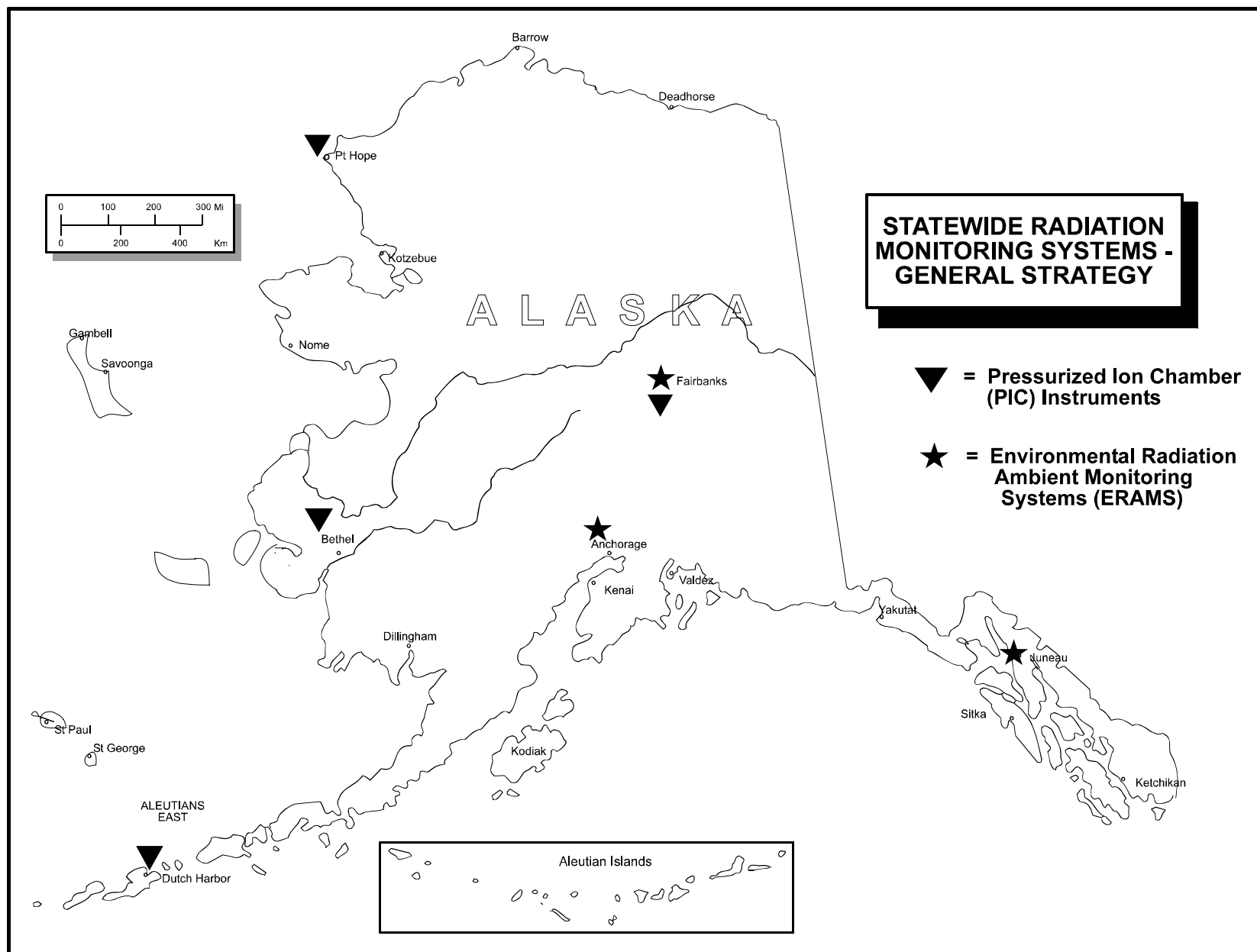
Capability. The ARAC is a centralized computer-base system that estimates the transport, diffusion, and deposition of radioactive materials released to the atmosphere and dose projections to people and the environment.

● **RADIATION EMERGENCY ASSISTANCE CENTER/TRAINING SITE (REAC/TS), (DOE, OAKRIDGE OPERATIONS OFFICE)**

Radiation Emergency Assistance Center/Training Site (REAC/TS), operated by the Medical Sciences Division of the Oak Ridge Institute for Science and Education for the U.S. Department of Energy, provides 24-hour assistance with medical and health physics problems associated with radiation accidents in local, national, and international arenas. REAC/TS is prepared to deploy to a radiological emergency with the FRMAC to provide:

- medical and radiological triage
- decontamination procedures and therapies for external contamination and internally deposited radionuclides, including chelation therapy
- diagnostic and prognostic assessments of radiation induced injuries, and
- radiation dose estimates by methods that include cytogenetic analysis, bioassay, and in-vivo counting.

Figure 2 - Statewide Radiation Monitoring Systems - General Strategy



(Change 1, May 1996)

FIGURE 3 - ALCOM RADIOLOGICAL ASSETS

USARAK (US Army)	M17 MASK	M24/25 MASK	M291 PERS DECON KIT	M13 DECON EQUIP	M8A1 CHEMDET	M256 CHEMDET	IM 93 DOSIMETER	IM 174 RADIACMETER	VDR 2 RADIACMETER	PDR 75 RADIACMETER	PDR 27 RADIACMETER
FRA (Ft Richardson)											
501st IN BN	660	0	810	64	23	69	77	12	27	6	1
21st SIG CO	202	NA	205	90	18	20	20		17	1	
23rd ENG CO	145	NA	200	NA	4	6	NA		4	4	
20th PAD	5	NA	0	NA	0	0	NA	4	NA	NA	
98th MAINT		239	NA	0	0	4	26	14		0	1
FWA (Ft Wainwright)											
HHC 1st BDE	396	NA	206	105	25	35	46		18	5	
1-17 IN BN	613	10	569	95	25	57	85		25	5	
4-9 IN BN	641	9	525	82	25	56	84		25	5	
4-11 FA BN	506	NA	504	126	17	65	23		5	5	
706 SPT BN	760	0	651	242	21	87	85		39	8	
A TP/4-9CAV	117	NA	220	21	14	25	33		17	1	
567 ENG CO	171	NA	375	12	5	12	20		5	1	
6 MI CO	163	NA	224	86	12	31	39	9	0	3	
47 ENG CO	142	NA	0	5	4	26	8		4	1	
BAND	42	NA	44	2	2	4	4		1	1	

(Change 1, May 1996)

FIGURE 3 - ALCOM RADIOLOGICAL ASSETS (continued)

USAFK (US Air Force)	PDR 27T RADIAC METER	PDR 27G RADIAC METER	PDR 27A RADIAC METER	PDR 43E RADIAC METER	PDR 43D RADIAC METER	PDR 56F RADIAC METER	ADM 300	IM 93 DOSIMETER	IM 143 DOSIMETER	TLV	CDV 750 DOSIMETER CHARGER
EAFB (Elmendorf AFB)											
3 CES/CEXD	6		1	11	1	6	3	12	83		5
3 AMS/SGPB	3	1				1	4			15	
EIL (Eielson AFB)											
343 CEX/SPTG	6			8		1		20			3
HOSPITAL	1			3		1	2				

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